

REMARKS

A Petition and Fee for a Three Month Extension of Time is submitted herewith.

Claims 7-26 are presently pending in this application. Claims 7 and 9-10 have been amended to more particularly define the claimed invention. Claims 11-26 have been added to claim additional features of the claimed invention. Claims 1-6 have been previously withdrawn from examination and have been canceled.

It is noted that the amendments are made only to more particularly define the invention and not for distinguishing the invention over the prior art, for narrowing the scope of the claims, or for any reason related to a statutory requirement for patentability. It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 7-10 stand rejected under 35 U.S.C. §102(e) as being anticipated by Murakami et al., U.S. Pat. No. 6,550,567.

This rejection is respectfully traversed in view of the following discussion.

I. APPLICANT'S CLAIMED INVENTION

The claimed invention (as defined, for example, by independent claim 7) is directed to an elastic support assembly for an electric power steering apparatus in which a worm shaft is supported movably in a rotation axis direction through the elastic support assembly. The elastic support assembly includes a pair of first and second members relatively moving in the rotation axis direction according to a movement of the worm shaft, an elastic body provided between the first and second members in the rotation axis direction, and a cover which covers

an outer periphery part of the elastic body from a radial direction of the worm shaft and is connected to the first member.

Conventionally, in the structure in which a worm shaft is supported through an elastic body there is considered a case where a dispersion in movable amount of the worm occurs owing to a dimension error and an incorporation error of an individual such as the elastic body. In such a case, an intended moving amount of the worm shaft is not ensured, or the backlash of the bearing becomes liable to occur because a pressure application to the bearing is insufficient. As a result, there may occur a disadvantage that a feeling of a steering wheel operation is deteriorated, or the abnormal noise is generated. In a case where a load exceeding an intended load is applied to the elastic body owing to the dispersion in movable amount of the worm, a problem occurs from a viewpoint in durability of the elastic body.

(Application at page 2, line 15 to page 3, line 3.)

The claimed invention (e.g., as recited in claim 7), on the other hand, includes a pair of first and second members relatively moving in the rotation axis direction according to a movement of the worm shaft, and an elastic body provided between the first and second members in the rotation axis direction. This feature is important because movement of the worm in the axial direction makes it possible to reduce an abnormal force by the collision of the tooth faces. (Specification at page 1, line 22 to page 2 line 3.)

II. THE ALLEGED PRIOR ART REJECTION

A. 35 U.S.C. § 102(e) Rejection over Murakami et al., U.S. Pat. No. 6,550,567

The Examiner alleges that Murakami et al., U.S. Pat. No. 6,550,567, (Murakami), teaches the invention of claims 7-10.

Applicant submits, however, that Murakami does not teach or suggest, “*a pair of first and second members relatively movable in the rotation axis direction according to a movement of the worm shaft,*” and “*an elastic body provided between the first and second members in the rotation axis direction.*”

Murakami teaches an inner side ring 15a fitted onto the first roller bearing 10 and fitting an outer side ring 16 into the first fitting hole 81, wherein an elastic member 18a is applied to the worm gear 71 via the inner side ring 15a and the first roller bearing 10. (Figs. 10-12, and column 14, lines 32-42.) Elastic member 18a is disposed between an inner side ring 15a and an outer side ring 16 in a radial direction from the worm gear 71, so that distal end of the worm gear 71a is urged in a direction toward the worm gear 71.

Thus, in Murakami, and the elastic member 18 interposed between an inner side ring 15a (corresponding to the first member) and an outer side ring 16a (corresponding to the second member) in a radial direction so that a worm is urged toward a worm gear in a radial direction.

Applicant’s claim 7 recites *a pair of first and second members relatively movable in the rotation axis direction according to a movement of the worm shaft, and an elastic body provided between the first and second members in the rotation axis direction.* With this arrangement, the elastic support assembly urges the worm toward the worm gear in the axial direction, and adjusts the movable amount of the worm in the axial direction.

Further, in Murakami, a housing 8 (corresponding to Applicant’s claimed cover) contacts only with the outer side ring 16, and does not cover the gap between the inner side ring 15a and the outer side ring 16. On the other hand, claim 7 recites a cover which *covers an outer periphery part of the elastic body from a radial direction of the worm shaft and is*

connected to the first member. With this arrangement, the foreign matters including wearing particles are prevented from entering into the internal space of the elastic support body from the outside and also an expansion/contraction operation of the elastic body is not hindered by the entry of the foreign matter. Murakami fails to disclose or suggest this feature and the structure of Murakami does not have this advantage.

Therefore, Applicant respectfully requests Examiner to reconsider and withdraw this rejection since the alleged prior art reference fails to teach or suggest each and every element and feature of Applicant's claimed invention.

B. Newly Added Independent Claim 25 with Respect to the Applied Prior Art References

Applicant adds new claims 25 and 26 to provide more protection for the claimed invention and to claim additional features of invention. These claims are independently patentable because of the novel features recited therein.

With respect to Applicant's newly added independent claim 25, the applied prior art references or any combination thereof fail to teach or suggest, "a pair of first and second members relatively movable in the rotation axis direction according to a movement of the worm shaft, ... wherein the pair of first and second members are spaced a distance from each other along the rotation axis direction according to a movement of the worm shaft," at least for analogous reasons to those set forth above with respect to claims 7-10.

Therefore, none of the cited prior art references nor any alleged combination thereof teaches or suggests each and every element of Applicant's claimed invention with respect to newly added claims 25-26.

Additionally, Applicant maintains that new dependent claims 11-24 are patentable

over any combination of the applied references at least for analogous reasons to those set forth above with respect to claims 7-10.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 7-26, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Date:

July 24, 2006

Respectfully Submitted,

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